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APPENDIX A

CALCULATION OF
GULF OF MEXICO SHRIMP CATCH

Exhibit A-1. Calculation of Gulf of Mexico Shrimp Catch

	Texas	Louisiana	Source/Comment
Landings (lbs)	75,078,833	88,229,189	NMFS, 1997/Avg. of 1995-96 landings
Catch:Landings Ratio	0.85	1.23	Offshore Environmental Assessment, Table 3-9 (Avanti, 1993)
Catch (lbs)	63,817,008	108,657,202	Landings * Catch/Landings ratio
Catch by Location (lbs)			Offshore Environmental Assessment, Table 3-9 (Avanti, 1993)/catch * 0.576 = 0-3 mile portion of catch 0-3 mile portion * 0.668 (TX) or 0.755 (LA) determines portion of 0-3 mile segment that is offshore (as opposed to coastal)
0-3 miles	36,758,597	62,586,549	
Coastal	24,517,984	47,252,844	
Offshore	12,240,613	15,333,704	
3-80 miles	27,058,411	46,070,654	
Offshore Area (mi^2)			
0-3 mile	1,107	1,314	Offshore Environmental Assessment, Table 3-11 (Avanti, 1993)
3-80 mile	28,413	33,726	
Catch/Area (lbs/mi^2)			
0-3 mile	11,057	11,669	
3-80 mile	1,331	1,752	
Weighted Average Catch (lb/mi^2)	11,443		Assumes all shallow wells drilled are in the Territorial Seas (0-3 mi); weighted by total catch/state

APPENDIX B

REANALYSIS OF
WATER QUALITY CRITERIA ASSESSMENT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
WATER

December 29, 1998

MEMORANDUM

TO: Administrative Record, Synthetic-Based Drilling Fluids Effluent Guideline

FROM: Kathy Zirbser

SUBJECT: Revised Federal Water Quality Criteria

Water quality analyses in the Environmental Assessment of the Proposed Effluent Limitations Guidelines Standards for Synthetic-Based Drilling Fluids and Other Non-Aqueous Drilling Fluids in the Oil and Gas Extraction Point Source Category (hereafter referred to as the Environmental Assessment) are based on national water quality criteria as recommended by EPA in February 1997. These water quality criteria are now superseded by the recently revised criteria as published in the Federal Register on Thursday, December 10, 1998 (attached). There is insufficient time to incorporate the revised criteria into the Environmental Assessment Document prior to rule proposal. EPA has, however, conducted an analysis to determine how the analysis would change incorporating the new 1998 criteria recommendations. This analysis is attached hereto.

Changes in criteria for four pollutants affect the analysis. The criteria changes are as follows (in redline/strikeout format):

Pollutant	National Recommended Water Quality Criteria		
	Saltwater Acute (μg/l)	Saltwater Chronic (μg/l)	Human Health for Consumption of Organisms Only (μg/l)
Arsenic	69	36	~~0.14~~
Copper	~~2.4~~ 4.8	~~2.4~~ 3.1	---
Mercury	1.8	~~0.025~~ 0.94	~~0.15~~ 0.051
Phenol			~~4,600,000~~

In the Environmental Assessment water quality assessment, modeled pollutant concentrations are compared to the most stringent of the saltwater acute, saltwater chronic, and human health (organism consumption) criteria. With the above changes to the national recommended water quality criteria, these most stringent values change as follows:

Pollutant	Most Stringent Criterion for Comparison to Modeled Concentrations (μg/l)
Arsenic	~~0.14~~ 36
Copper	~~2.4~~ 3.1
Mercury	~~0.025~~ 0.051
Phenol	~~4,600,000~~ No criterion

For each of the above pollutants, the criterion for comparison with modeled pollutant concentrations becomes less stringent. As a result, the number of modeled criteria exceedances for pore water is reduced (for the water column analysis, no exceedances are projected, as was the case using the 1997 criteria). The total number of projected exceedances for model wells (under both current practice and the discharge option) is reduced from 19 (using 1997 criteria) to 10 (using 1998 criteria). The changes in exceedances are as follows:

Factors by Which Pore Water Pollutant Concentrations at the Edge of the 100-meter Mixing Zone Would Exceed Federal Water Quality Criteria Recommendations for each Regulatory Option and Model Well[a]

		Shallow Water				Deep Water			
		Development Well		Exploratory Well		Development Well		Exploratory Well	
Discharge Region	Pollutant	Current Practice	Discharge Option	Current Practice	Discharge Option	Current Practice	Discharge Option	Current Practice	Discharge Option
Gulf of Mexico	Arsenic	~~1.3~~ ---	---[c]	~~2.7~~ ---	---	~~1.9~~ ---	~~1.1~~ ---	~~4.3~~ ---	~~2.5~~ ---
	Chromium	---	---	1.7	---	1.3	---	2.8	1.6
	Mercury	---	---	---	---	---	---	~~1.2~~ ---	---
	Metals Composite[b]	1.1	---	2.3	1.3	1.7	---	3.7	2.1
California	Arsenic	---	---	Not applicable		~~1.2~~ ---	---	Not applicable	
	Metals Composite[b]	---	---	Not applicable		~~1.1~~ ---	---	Not applicable	
Cook Inlet, Alaska	Arsenic	---	---	Not applicable		Not applicable		Not applicable	
	Metals Composite[b]	---	---	Not applicable		Not applicable		Not applicable	

(a) There would be no exceedances for any pollutants with the zero discharge option.
(b) Metals composite includes cadmium, copper, lead, nickel, silver, and zinc.
(c) "---" indicates no exceedances are predicted.